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A study of the impact of coronavirus on consumer perceptions and consumption of corona beer

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Abstract

Corona Beer has been brewed and bottled in Mexico since 1925. In 1981, it was introduced into the United States market, where Corona Extra became the fastest growing imported beer in the country's history. Now, Corona Extra is the top selling imported beer, the fifth most sold beer throughout the United States, and the most valuable beer brand in the world-valued at \$8.1B US (Waterworth, 2020) [17]. From the beginning of COVID-19, the virus which caused the global pandemic of 2020, the virus was called the coronavirus. A coronavirus is relatively common, and most will catch a coronavirus at least once in their life (Sauer, 2020) [14]. For Corona Beer, though, the link to a virus causing a global pandemic was an unfortunate coincidence. The previous iterations of the coronavirus (SARS and MERS) were not called coronavirus in public, so this linking of the virus and the beer only happened during COVID-19. The Coronavirus outbreak started in Wuhan, China resulting in a respiratory disease that has infected and killed hundreds of thousands, shut down schools, businesses, and infrastructures and had a huge negative toll on global economies. From January 18th to January 26th searches for "Corona Beer virus" spiked 2,300% (O'Kane, 2020) [9]. The goal for our research was to understand how much connection consumers made between the virus and the beer, and our hypothesis was it would have hurt the brand. We found quite the opposite, and Corona Beer has seen record sales during the COVID-19 pandemic. Our research shows only positive connections in consumer perceptions of the brand.

Keywords: coronavirus, corona beer, COVID-19, consumer behavior, novel coronavirus

Introduction

In this study, we were looking at the relationship between coronavirus and Corona Beer. Our goal of the study was to discover the level of knowledge that people had about coronavirus and how it impacts their purchases and perception of Corona Beer currently, and for the future. The hypothesis was Corona Beer would be negatively impacted by the onset and knowledge of the coronavirus, COVID-19.

Coronaviruses are respiratory diseases that the majority of people will recover from without any special treatment (Sauer, 2020) [14]. However, the elderly, and people with underlying medical conditions like cardiovascular disease, diabetes, chronic respiratory disease, and cancer, are in danger of serious illness and are more likely to face the severe repercussion of the coronavirus (Coronavirus, 2020) [16]. The coronavirus is an airborne disease that spreads from person to person primarily through coughing and sneezing.

At the beginning of the study, the coronavirus had infected around 2.5 million people, and about 170,000 people had died due to the virus worldwide. Around 787,000 people had been infected with coronavirus in the United States alone, resulting in over 42,000 deaths of Americans (Reals *et al.*, 2020) [13]. The ease at which the disease spread, and how contagious the disease was, caused a global panic and pandemic. At the beginning of this study, the coronavirus had started to affect people's everyday lives as the disease progressively spread. Most areas in the United States had started to undergo quarantine. This included certain areas where the disease was concentrated. Quarantine, where people possibly exposed to the disease stay in a confined area, like their house or a room, to limit the spread of the virus, for the 14-day incubation period, became a common term and accepted as a solution for stopping the spread. In many countries, quarantine plus social distancing, hand washing, and face masks were used as the top measures to combat the spread of the coronavirus (Nussbaumer-Streit *et al.*, 2020) [8].

In the years leading up to the COVID-19 coronavirus outbreak, Corona Beer had established

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Associate Professor of Food Marketing, Haworth College of Business, Western Michigan University, Kalamazoo, Michigan, USA Itself as the top selling import beer from Mexico and ranked as one of the most popular beers in the United States, domestic and import. Corona, owned by Constellation Brands, is solely brewed and bottled in Mexico, and is valued at \$8.1B US (Waterworth, 2020) [17]. Throughout the year 2019 Corona Beer had an increase in sales of 7%, which was high in a market that saw many other competitors in beer not showing any growth. Corona is the top brand imported into the United States and has been so for the past 20 years. Corona is also a top 5 beer brand, when compared to all beer sold in the United States. Corona has two flagship types of beer sold, in Corona Extra and Corona Light. In addition to these two top selling beers, the brand had recently decided to try to develop new beverages, such as Corona Refresca and Corona Premier. These beverages are a version of a seltzer, but they are more premium and, a healthier beer, respectively (Arthur, 2019) [2]. When the new coronavirus, COVID-19, was first discovered, it was seen as one more in the long line of coronaviruses. But, the difference in early 2020 was the term "coronavirus" caught on as the name, instead of the official "novel coronavirus COVID-19". Even as COVID-19 was primarily present in western Asia and the pacific islands, the Corona Beer company announced they were not going to change their marketing strategy due to the coronavirus. As the outbreak continued and the name coronavirus was often associated with the name of the Corona Beer, the brand was at a precipice as to whether or not they should halt production of Corona and Corona Light. In fact, having Corona parties became a social media phenomenon (Burke, 2020) [4]. In this situation, any brand must balance between maintaining supply while also ensuring they are not seen as promoting the link between Corona and the coronavirus. Risk averse consumption behavior has been noted in multiple global and national disasters (Zwanka and Buff, 2020) [20]. One New York-based public relations firm interviewed 737 people who drink beer in the United States and found that "38% would not drink Corona for any reason." Among the loyal Corona drinkers, only "4% of the people would not drink Corona beer due to the coronavirus." "14% of loyal Corona drinkers would not drink it in a public setting." It should also be noted that 16% of the people surveyed were confused if the Corona Beer and the coronavirus were related (Carlin, 2020) [5].

As the coronavirus spread throughout the world, it started to affect supply chains and production of many different industries, including Corona Beer production. The production of Corona Beer stopped. Grupo Modelo, the company that brews Corona, stated they were stopping the production of Corona beer due to Mexico stopping all nonessential businesses. During the time of the survey, the production of Corona beer had stopped due to the spread of the coronavirus (Ortiz, 2020) [10]. Although production of Corona had been stopped, the beer sales of Corona were not affected tremendously by the virus. Due to the quarantine and social distancing practices taken effect as instructed by federal and local governments, beer and wine sales in the United States have increased. The sale of beer as a whole went up in the United States at a higher rate than the previous two years (Pershan, 2020) [11]. Nielsen reported a 54% increase in alcohol sales the week of March 24, 2020, as the full extent of the pandemic and lockdown were hitting the public (Pollard et al., 2020) [12]. The Corona Company still had roughly two months of inventory left for its

products that could be sold after production was halted. Constellation sells about 85% of its inventory outside of bars and restaurants to be consumed at home, so the result of the closing bars and restaurants had not taken a huge toll on the sales of Corona Beer (Alpert, 2020) [1]. The Coronavirus made the Constellation stock drop around 25%. Despite this initial setback, the stock is projected to grow 10% annually over the next 5 years. After the virus, it is predicted that Constellation will make a full recovery but it may take a while to do so (Hall, 2020) [7].

Survey construct and results

The purpose of the survey was to determine if people had a negative view of Corona Beer since the Coronavirus outbreak. Furthermore, to see if Corona Beer sales will be affected in the future because of people having a negative perception of the company. A survey was constructed consisting of 20 questions gauging respondents' initial knowledge and perceptions of Corona Beer. The survey then transitioned questions towards attitudes and consumer behavior impacts, and how they will affect purchasing habits in the future and their perception of the brand. The survey was sent initially to college students and then used the snowball method to reach a larger sample size. The survey was released before Corona Beer had announced it would stop producing beer because of Mexico deeming alcohol a non-essential business.

The sample size our survey returned was n=101. The demographics of our survey, as seen in Figure 1, showed the majority of respondents were between the ages of 18-24.

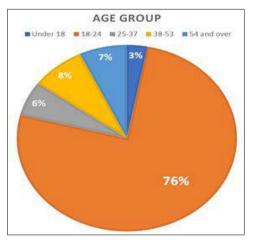


Fig 1: Age Breakout of Respondents

Of our 101 respondents, 90 were White/Caucasian represented through Figure 2.

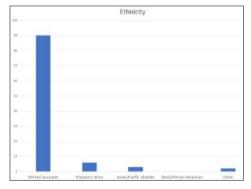


Fig 2: Ethnic Breakout of Respondents

Figure 3 reflects 91% of respondents drink alcohol and of that 91%, 83% have consumed Corona Beer previously (as shown in Figure 4). From this, we can postulate that a majority of our respondents have heard of Corona Beer before and are aware of the brand. On the other hand, 100% of respondents had heard of the coronavirus. Therefore, we can conclude that respondents have some awareness of Corona Beer and the Coronavirus.

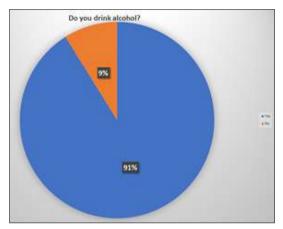


Fig 3: Survey Respondents Who Drink Alcohol

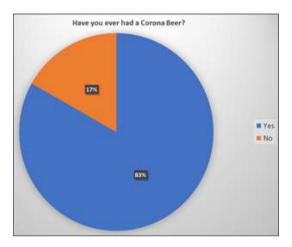


Fig 4: Survey Respondents Who Have Consumed Corona Beer

The first set of questions being analyzed is looking at people's purchasing habits of Corona Beer and if they will be affected because of the coronavirus. Our first question regarding people's perception of Corona Beer asked: "Has Coronavirus affected your purchasing habits of Corona Beer?" This was to determine if, during the pandemic, people were still going out to buy Corona Beer; or if they have stopped altogether. Of the 100 responses, 81 answered their purchasing habits have not been affected, 7 answered yes, and 12 had no opinion (Figure 5). From this, we can ascertain the pandemic has not affected the current purchasing habits of people.

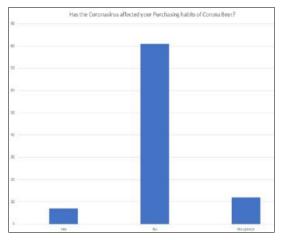


Fig 5: Has the Coronavirus Impacted Your Purchases of Corona

Reer?

Next, we asked a number of questions designed to determine if the coronavirus would affect the market for Corona Beer. The answers we received were that 62 said it would have a negative effect, 16 responded it will have a positive effect, and 8 stated that it will have no effect (Figure 6).

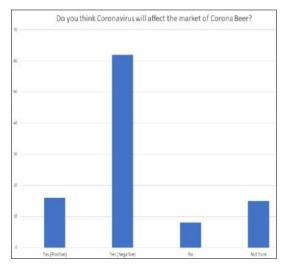


Fig 6: Respondents' Belief in Impact of Corona Beer Sales

The interesting aspect of the answers is the survey respondents said the coronavirus would have no impact on their personal consumption habits, but they overwhelmingly believed the virus would have an impact on others' behavior. The majority of respondents thought that the pandemic would have a negative effect on the market for Corona Beer. While this seemed logical it didn't follow the respondents for Figure 5. While people thought the Corona Beer market would be affected poorly, they are still willing to buy the beer currently. This conundrum was then cleared up partially with our next question: "Will the Coronavirus affect your purchasing habits of Corona Beer for the future?" The respondents' answers were nearly a complete split with 47% saying "yes" and 47% saying "no, I will continue to buy Corona Beer" (Figure 7). This number of 47% saying "yes" is up from the 7 respondents saying that currently their purchasing habits have not been impacted.

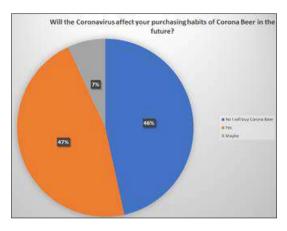


Fig 7: Will the Coronavirus Impact Your Future Consumption?

Based on these sets of questions we could possibly conclude that people believe Corona Beer's market/business will be affected by the coronavirus in the future and that their purchasing habits may change in the future as well. Where we come up short in the analysis is in the difference between what people think the virus will do to their personal consumption versus what they think it will do to the consumption behavior of other consumers. The second set of questions being analyzed focused on people's perception of the brand of Corona Beer and how its reputation will be affected by the coronavirus. The first question was: "When you hear coronavirus do you think of Corona Beer?" Figure 8 shows that 14 respondents answered yes, 44 said no, and 42 stated sometimes.

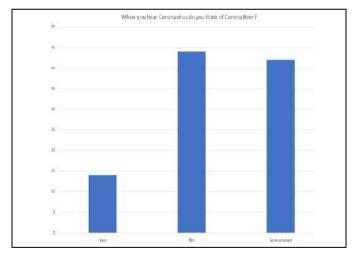


Fig 8: When You Hear Coronavirus Do You Think of Corona Beer?

This shows that there is some relationship where people think of Corona Beer when the word coronavirus is used. While this may be a minor factor, the survey was designed to determine if people had a negative affiliation with the word "Corona". Therefore, in our next question, we asked: "Should Corona Beer change its name?" It was an overwhelming majority of "no" for this question which can be seen in Figure 9. We possibly understand from these responses that the word "Corona" does not have a negative affiliation with it, solely a relationship without negative nor positive connections. We can also start to draw a conclusion, at this point in our research, Corona Beer brand has not been affected negatively due to its name.

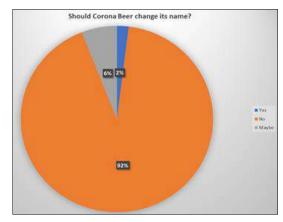


Fig 9: Should Corona Beer Change its Name?

However, with the final question of our survey, we asked: "Has Corona Beer reputation been affected by the Coronavirus?" Of the respondents, 49 answered yes in a negative way, 9 said yes in a positive way, 13 responded no, and 27 were not sure (Figure 10). With this response it seemed that most people would say that the Corona Beer brand will be affected in a negative way in the future because of this pandemic. In a sense, the survey respondents seem to be reflecting an overall perspective that they will not change their consumption behavior, but that the pandemic will change overall behavior of others.

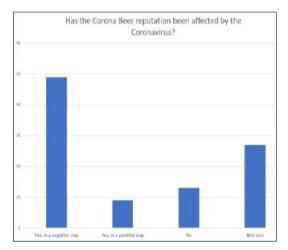


Fig 10: Has Corona Beer Reputation Been Affected by Coronavirus?

Regression analysis

To further investigate our findings, we ran multiple regression models to determine if there were any variable relationships we could interpret as driving the responses we received in our survey. For both of the following regression models, we used an alpha of .05. Dummy variables were created for the questions that had more than two possible answers. We used R Studio to run several regression analyses, plugging in various dependent variables and independent variables. In this report, we will look at two specific regression analyses that appear to show interaction of variables. For the first regression analysis, we took respondents that answered "the reputation of Corona Beer will be affected in a negative way" and made this our dependent variable. For our independent variables we took the answers from other questions such as: "I will not buy Corona in the future", "I prefer Corona Beer to change its name", and "I am no longer buying Corona Beer". We chose these as our independent variables because we wanted

to see if there was a consistent negative output from certain respondents. In Figure 11, the regression analysis produced an interesting result. With an adjusted R^2 of almost 0, the independent variables seem to not be driving the respondents' answer to the reputation of Corona Beer being affected negatively. Furthermore, all of the p values for each independent variable were greater than our alpha of .05, therefore, showing that these factors did not affect our dependent variable. This means that there were factors driving people's opinions on Corona Beer's reputation that we did not consider.

Fig 11: Multiple Regression of Those Responding Negatively

In this analysis

- Intercept=Respondents that answered Yes in a negative way to "Has the Corona Beer reputation been affected by the Coronavirus?"
- BuyCoronaFuture1= Respondents that answered No to "Will you buy Corona in the future?"
- ChangeName2= Respondents that answered Yes to "Should Corona Beer change its name?"
- AffectPurchasingHabitsDuring2= Respondents that answered Yes to the question "Has the Coronavirus affected your purchasing habits of Corona Beer?"

For the second regression model, we took the answer to "The market for Corona Beer has been affected negatively by the Coronavirus" and made it our dependent variable. This time we wanted to see if there was any correlation between respondents from our dependent variable and what respondents answered for the question "Has Corona Beer's reputation been affected by the Coronavirus?" This time we got a somewhat more promising adjusted R^2 of .42, meaning that 42% of the variation in our dependent variable can be explained by the variation in our independent variables. However, for respondents that answered "No, Corona Beer reputation will not be affected", it had a high p-value therefore, it was not a driver for the dependent variable. For respondents that answered "Yes, the reputation will be affected in a positive way", the p-value was .07, which was almost acceptable for our alpha of .05. The variable that appeared to be our driving factor in the model was respondents that answered: "Yes, the reputation will be affected in a negative way". The p-value for this variable was almost 0, which was a promising result, as shown in Figure 12.

Fig 12: Multiple Regression to Determine Impacts on Reputation

In this analysis

- Intercept= Respondents that answered Yes in a negative way to the question "Has the Coronavirus affected the market for Corona Beer?"
- ReputationAffected1= Respondents that answered yes in a negative way to the question "Has the Corona Beer reputation been affected by the Coronavirus?"
- ReputationAffected2= Respondents that answered yes in a positive way to the question "Has the Corona Beer reputation been affected by the Coronavirus?"
- ReputationAffected3= Respondents that answered no to the question "Has the Corona Beer reputation been affected by the Coronavirus?"

Based upon this regression model we could possibly conclude respondents that answered "Yes, the reputation will be affected in a negative way" also answered, "The market for Corona Beer has been affected negatively by the Coronavirus". By running a Durbin-Watson test based on this regression model, the p-value came out to be .71. By having a high p-value, we can conclude there is no autocorrelation in our model. This further enforces our beliefs that the independent variables (specifically, "Yes, the reputation will be affected in a negative way") are possibly affecting our dependent variable.

To put this into a larger picture if we assume that our sample represents the whole population, we can infer that people who think that Corona Beer's reputation will be affected negatively will believe the market for Corona Beer will also be affected in a negative way about 42% of the time.

Limitations to our research and replication

There were multiple limitations and potential problems with the responses we received throughout the survey, which will need to be considered in future research and/or replication of the study. First, our sample size of n=101 would not be representative enough to conclude that the findings represented the entire population. This restriction was due to the time frame our survey was available and the outreach for respondents we were able to achieve for this survey. Second, from Figures 1 and 2, our survey only reached a small subset of demographics consisting of mostly Caucasian college students. Third, because of the nature of the current pandemic, respondents may be sensitive to answering questions relative to coronavirus. Furthermore, people may have not responded altogether because they would not want to take a survey regarding the coronavirus. These restrictions regarding people taking the survey would not be possible to adjust, since the respondents were promised anonymity and confidentiality.

There were a few potential problems that we discovered after analyzing the data from the survey. One was in Figure 8 people may not buy Corona Beer in the future not based on the perception of the brand, but because of the unforeseen after-effects of the coronavirus. Another problem we could have addressed was in Figure 6. Our question which could have been expanded on more was asking if people had a negative affiliation with the word Corona, rather than leaving it as just our Figure 6 question. Another potential issue was involving our second regression model. We found there was a correlation between our dependent variable and one of our independent variables. Also, our adjusted R^2 we computed was relatively

promising compared to previous adjusted R^2 from other regression models we ran. We assumed linearity, independence of variance, normality, and equal variance which are the baseline assumptions necessary for a regression model to be correct. We skipped these steps and jumped right to a Durbin Watson test to test for autocorrelation, which we found there was none. Based upon this result we assumed that all other assumptions were correct.

Conclusion

From Corona Beer's perspective, they appear to have made the right decision in stopping production at the onset of the pandemic. They, in fact, had no choice based upon Mexico's determining beer production was not essential, but might have been wise to come to the conclusion on their own. The brand needed to do everything in its power to disassociate with the virus and the lockdown parties, but still maintain its leadership position as the top valued beer brand in the world.

Based upon our survey results, people seem to believe that Corona Beer will be affected negatively both in its reputation and through its sales; but only for "other people". For their own consumption behavior, it would appear the linking of Corona Beer and the coronavirus has resulted in positive sales for Corona. From our first regression analysis we concluded there was no relationship between our x variables, consisting of respondents who consistently answered they won't be buying Corona beer to various questions. Our y variable, in this case, consisted of respondents who thought Corona beer reputation would be affected in a negative way. Based upon these results, it seemed that there were other factors affecting our v variable. Once again, survey respondents frequently state what they think those administering the survey would like to hear, and it is not related to their own actions at all, called desirability bias (Singh, 2019) [15].

For our second regression analysis, we found a slight ability to predict our y variable with our x variables specifically respondents who thought Corona Beer's reputation would be affected in a negative way. These respondents were likely to answer yes to the coronavirus affecting their future purchasing habits of Corona Beer (our y variable).

Overall, from our research, we can possibly conclude that Corona Beer has been impacted negatively in opinion and not been impacted negatively in sales.

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